

Name _____ Class _____ Date _____

Scientific Method Tutorial

Biology

http://www.gccaz.edu/biology/glacier/scientific_method/index.swf

Click continue and enter your first and last name on the next page you see. As you work through the tutorial answer the following questions.

Click Tutorial

1. What are the "steps" of the scientific method (left hand margin)

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

2. What are three important points to remember when stating or defining a problem?

- a. _____
- b. _____
- c. _____

3. What are some sources of information?

4. How many independent variables should there be in an experiment? _____

5. Was Michaels experiment with the plants and the effect of music a good experiment? Why or why not?

6. What is a controlled factor?

7. What causes the oranges to ripen?

8. Why did the rats die? _____

9. Do scientists prefer simple or complex explanations? _____
Why?

Click Cricket

10. In the cricket study, what were the initial observations?

In your experiment, the rate of cricket chirps is the dependent variable. You should have tested each of the five possible independent variables to determine which of these might affect chirp rate. However, you only manipulated one variable at a time. Why?

List the five independent variables you tested and their effect on chirp rate.

Variable	effect

Independent Variable Effect on Chirp Rate

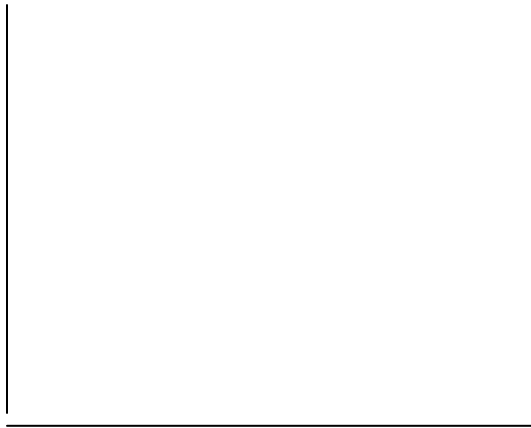
Write a hypothesis for chirp rates based on air temperature.

When testing the hypothesis above, how many crickets were near the chirping male? _____

what was the wind speed? _____

what was the humidity? _____

Graph the results of your experiment using air temperature. Label the independent (x axis) and dependent (y axis) variables and indicate the units for each.



Based on these results, what do you conclude about your hypothesis?

What other factors, not available on this simulation, might you test?